

15. (Previously presented) The process of claim 8 wherein the curved portion is in a plane, the stretching step is accomplished by stretching the preform out of the plane, and the shaping step is accomplished by shaping the curved portion into the plane.

REMARKS

This is a response to the Office Action dated November 1, 2005.

Summary of Office Action

In the Office Action, Claims 8-15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Mckague Jr. et al. (U.S. Patent No. 6,553,734 hereinafter the '734 patent) in view of Mckague Jr. et al. (U.S. Patent No. 6,520,706 hereinafter the '706 patent). Claims 1, 3-4 and 6-7 are allowed.

Also, the Office Action was made final.

Applicant's Response

CLAIMS 8-15

In the Office Action, Claim 8 was rejected under 35 U.S.C. §103(a) as being unpatentable over the '734 patent in view of the '706 patent. Applicant's have amended Claim 8 to clarify that the process of forming the curved portion is accomplished in two steps. In the first step the preform is stretched. Only after the stretching step, the preform is shaped into a substantially flat curved configuration to form the curved portion. The process recited in Claim 8 provides more control over the preform by bifurcating the stretching and the shaping steps. The stretching step permits the preform to be strategically stretched at varying degrees at varying locations to a greater degree compared to a process wherein the stretching and shaping steps are simultaneously accomplished. As a result different types of curved shapes are producible via the separate stretching and shaping steps recited in Claim 8. As shown in Figure 3 of the present application, the foot portion (i.e., the curved portion) has been progressively expanded from the first edge to the second edge. As will be discussed

below, the process disclosed in the '734 and '706 patents are not capable of producing the curved foot portion shown in Figure 3 of the present application.

The process disclosed in the '734 patent does not separately perform the stretching and shaping steps. Rather, the stretching and shaping steps are accomplished simultaneously in a single step. In support thereof, Applicant's respectfully direct the Examiner's attention to Figures 3 and 4 and Column 3, Lines 29-39 of the '734 patent. As understood, such reference section of the '734 patent discloses that the stretching and shaping steps are simultaneously accomplished in a single step. Accordingly, the '734 patent and the '706 patent does not disclose a shaping step which is accomplished after the stretching step, and thus Claim 8 is believed to be novel over the '734 patent.

Moreover, there is a motivation to modify the teachings of the '734 patent such that the stretching and shaping steps are separately performed. As understood, the final product is configured to the final configuration out of the dies. An intermediary configuration does not stretch the preform to the length of the curved portion which will be subsequently reconfigured to the final configuration (i.e., curved configuration). The specification itself states that an object of the invention is to "provide an undulated structural panel that is formed in one operation." (emphasis added). ('734 patent, col. 2, lns. 18-20). Hence, there is no motivation to modify the '734 patent such that the stretching and shaping steps are separately performed.

Claim 8 has also been amended to recite that the shaping step shapes the preform into a substantially flat curved configuration to form the curved portion. As shown in Figure 3 of the present application, the foot portion is curved and is substantially flat. The '734 patent does not teach the step of shaping the preform into a substantially flat curved configuration. As shown in the figures of the '734 patent, the preform formed by the process disclosed in the '734 patent is curved but is not substantially flat. Rather, the formed preform is 3-dimensional. The curvature is in the XZ plane and the length of the preform is in the Y direction. In contrast, the preform (e.g., foot portion) of the instant invention recited in Claim 8 is substantially flat (i.e., two dimensions). As shown in Figure 3 of the present application, the preform shaped into a curved configuration (e.g., foot portion) is substantially flat. Moreover, as shown in Figure 11, the preform shaped into a curved

configuration (i.e., leg portion) is substantially flat. The '734 patent does not disclose such a limitation.

In the '706 patent, the curved portion 31 is not substantially flat but the curved portion 13a (See Figure 6a) is substantially flat; however, the process disclosed in the '734 patent may not be employed to form the curved portion 13a disclosed in the '706 patent. The reason is that the process of the '734 patent requires a compressive force which would be applied to the first and second edges of the curved portion 13a. The compressive forces, as understood, would buckle such curved portion to render the curved portion 13a with wrinkles, which would be unacceptable based on a view that a purpose of the '734 patent is to form complex shapes without wrinkles. ('734 patent, col. 3, ln. 54). Accordingly, the '734 patent and the '706 patent do not disclose, suggest or make obvious invention recited in amended Claim 8. For the forgoing reasons, Claim 8 is believed to be in condition for allowance.

The dependent claims of Claim 8, namely Claims 9-15 are also believed to be in condition for allowance for containing additional patentable subject matter. For example, in Claim 13, the mating dies define molding surfaces having a tapered sine wave configuration. In the Office Action, on Page 3, the Examiner states that the '734 patent teaches a "tapered (expanding the preform from the first edge to the second edge) sine-wave configuration flange out-of-plane (See Column 4, Lines 16-29 of Figure 8)." Applicants respectfully disagree. Figure 8 of the '734 patent is not of mating dies that define molding surfaces having a tapered sine wave configuration. Rather, Figure 8 shows a panel 91 having a tapered configuration. In support thereof, Applicants respectfully direct the Examiner's attention to Column 4, Lines 22-29. Although the panel 91 may be tapered, such taper panel does not necessarily teach that the mating dies define molding surfaces having a tapered sine wave configuration. For example, the preform may have been cut with shears in a tapered configuration then simultaneously stretched and shaped by the molding dies. Such process would have produced or formed the panel shown in Figure 8, but the mating dies would not have a tapered sine wave configuration. Accordingly, the '734 patent does not disclose, suggest or make obvious the subject matter recited in Claim 13, and thus Claim 13 is believed to be in condition for allowance for containing additional patentable subject matter.

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Also, Claims 9-12 and 14-15 are also believed to be in condition for allowance for containing additional patentable subject matter. The dependent claims of Claim 8, namely, Claims 9-15 are also believed to be in condition for allowance for being dependent upon an allowable base Claim 8.

Conclusion


For the foregoing reasons, Applicant respectfully submits that all of the stated grounds of rejection have been overcome, and that Claims 1, 3-4, and 6-15 are in condition for allowance. An early Notice of Allowance is therefore respectfully requested.

Should the Examiner have any suggestions for expediting allowance of the application, the Examiner is invited to contact the Applicant's representative at the telephone number listed below.

If any additional fee is required, please charge Deposit Account Number 19-4330.

Respectfully submitted,

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